

Appendix F
Waste Management Plan

Waste Management

1. INTRODUCTION

This Waste Management Plan (WMP) discusses the handling and disposition of waste generated during the Central Facilities Area (CFA)-08 engineered barrier installation at the Idaho National Engineering and Environmental Laboratory (INEEL). CFA-08 is defined as the Sewage Plant Drainfield located at the CFA at the INEEL. Detailed regulatory and remedial strategies are contained in the work plan and the Record of Decision (ROD) for CFA Operable Unit (OU) 4-13 (Department of Energy Idaho Operations Office [DOE-ID] 2000). This action is being performed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as implemented by the *Federal Facility Agreement and Consent Order* (FFA/CO).

This WMP identifies the types and volumes that will be generated during the CFA-08 engineered barrier installation. This plan also identifies each of the waste streams, describes waste minimization activities, and provides the requirements for waste transportation and ultimate disposition. All wastes will be disposed in accordance with the Reusable Property, Recyclable Materials, and Waste Acceptance Criteria (RRWAC) and appropriate regulations.

2. WASTE MINIMIZATION AND SEGREGATION

Waste minimization for this project will be achieved through design and planning to maintain efficient operations. As part of the prejob briefing, emphasis will be placed on waste reduction philosophies and techniques, and personnel will be encouraged to continuously attempt to improve methods for minimizing waste generation.

Waste streams will be segregated primarily by the field activity that is being conducted at the time of generation. For this project, minimal intrusion into the Sewage Plant Drainfield will occur; therefore, the types of waste that will be generated will consist of nonconditional industrial and conditional industrial. However, the drainfield is contaminated with cesium-137, so there is a possibility that low-level radioactive waste could be generated. Each of these waste types will be segregated inside the work area until removal for subsequent waste management activities. Practices to be instituted to support waste minimization include, but are not limited to, the following:

- Substituting recyclable items for disposable items
- Reusing items (where practical)
- Segregating contaminated waste from uncontaminated waste (if applicable)
- Segregating reusable items such as personal protective equipment (PPE) and tools.

3. CHARACTERIZATION

Waste Generator Services (WGS) is responsible for the management of all wastes generated during this project. The management control procedures (MCPs) that will be used to effectively manage these wastes are:

- MCP-62, “Waste Generator Services—Low-Level Waste Management”

- MCP-63, “Waste Generator Services—Conditional Industrial Waste Management”
- MCP-70, “Waste Generator Services—Mixed Low-Level Waste Management”
- MCP-3472, “Identification and Characterization of Environmentally Regulated Waste.”

In order to disposition waste to the CFA landfill or the Radioactive Waste Management Complex (RWMC), the WGS CFA Facility Representative will be contacted, a waste technical specialist (WTS) will be assigned, and an INEEL Waste Determination and Disposition Form (WDDF) (Form 435.39) will be completed and submitted for approval. The WDDF satisfies the requirements of 40 CFR 262.11 and DOE Orders 435.1 and 5400.5. The WDDFs will also be used as the hazardous waste determinations for CFA-08 generated waste. Once the WDDF is approved, the WTS will provide assistance in coordinating with packaging and transportation (P&T) personnel to ensure appropriate P&T requirements are met. Table 3-1 identifies the types, waste classifications, and estimated volumes of waste that will be generated during this project.

Table 3-1. Expected waste generated from remedial action activities.

Waste Type	Expected Waste Classification	Estimated Volume
Administrative (paper, packaging, etc.)	Nonconditional industrial	1 yd ³
PPE/plastic sheeting (personal protective clothing) (gloves, tyvek, etc.)	Conditional industrial or low-level radioactive	5 yd ³
Site fencing	Nonconditional industrial or low-level radioactive	50 yd ³
Telephone poles	Nonconditional industrial or hazardous or low-level radioactive or mixed	5 yd ³
Soil/hydraulic spills	Conditional industrial or low-level radioactive	1 yd ³
Vegetation/soil	Nonconditional industrial or low-level radioactive	200 yd ³

4. ONSITE MANAGEMENT AND DISPOSITION

Wastes generated from the installation of the engineered barrier system will be segregated and stored within the work area until final disposition. A WDDF will be completed by an assigned WGS WTS for each waste stream, as described in Section 3. Potential low-level radioactive waste generated from the project will be containerized, labeled per radiological control technician (RCT) requirements, and stored at the site until arrangements have been made for shipment. A description of each waste stream is presented in the following subsections.

4.1 Nonconditional Industrial Waste

Administrative waste generated during the project will primarily consist of used paper, tape, packaging materials, bottles, cans, bags, meal refuse, and other related materials associated with the

administrative functions. This waste will be contained in clear plastic trash bags that can be placed in the nearest dumpster for disposal at the CFA Landfill Complex.

Other nonconditional waste generated during the engineered barrier installation may consist of fence posts, telephone poles, site soils, vegetation, and debris. Each waste stream must be surveyed by an RCT to determine whether the materials are radiologically contaminated. Materials exhibiting an increase in background counts per minute above 100 will be considered radiologically contaminated and must then be managed as low-level radioactive waste. Telephone poles and fence posts that are considered nonradiologically contaminated and nonhazardous may be shipped to the CFA Landfill Complex in bulk for disposal; however, a WGS WTS must have an approved WDDF to do so.

4.2 Conditional Industrial Waste

Personal protective equipment, including anti-C clothing marked with a radiation trifoil (if applicable), is the only conditional industrial waste that will be generated during this project. Following an RCT survey, this material will be packaged in clear plastic bags and disposed of within the CFA Landfill Complex. A current, approved WDDF is available for this type of conditional industrial waste (WSID #1389); therefore, the WGS WTS need only be contacted to arrange for disposal at the CFA Landfill Complex. Should the material be considered radiologically contaminated, the material will be placed within yellow plastic bags and managed as low-level radioactive waste.

4.3 Low-Level Radioactive Waste

Low-level radioactive waste generated during this project may include PPE, site soils, telephone poles, and fence posts. PPE will be bagged in yellow plastic bags and the WGS WTS will arrange for the shipment and disposal of the material at the RWMC. Fence posts and telephone poles must be sized and placed within $1.2 \times 1.2 \times 2.4$ -m ($4 \times 4 \times 8$ -ft) metallic boxes and the boxes must be labeled per RCT and P&T discretion prior to shipment to the RWMC for disposal. Note that sizing material may require establishment of a Radioactive Materials Storage Area (RMSA) and a containment structure to perform the activity. WGS, in conjunction with RCT personnel, must be contacted in order to arrange the establishment of the RMSA and containment structure.

4.4 Hazardous and/or Mixed Waste

Hazardous and/or mixed low-level waste may be generated during this project. This waste may consist of cresol-soaked wooden telephone poles. The telephone poles must be surveyed by an RCT to determine whether they are radiologically contaminated. Pending the radiological survey and the results of the hazardous waste determination, the telephone poles will be dispositioned at an approved Treatment, Storage, and Disposal facility. If disposal is required at an off-INEEL Treatment, Storage, and Disposal Facility, then a CERCLA offsite suitability determination will be required.

5. PACKAGING

No hazardous waste, with the exception of the telephone poles, should be generated during this project. Packaging of waste materials will be in compliance with the RRWAC and the U.S. Department of Transportation (DOT) regulations (49 CFR 171, 173, 177, and 178). Nonconditional industrial administrative waste and conditional waste PPE will be packaged in clear plastic bags, as per the RRWAC, for disposal at the CFA Landfill Complex. Soils and debris not considered low-level radioactive or CERCLA waste can be shipped in bulk to the CFA Landfill Complex (i.e., no packaging necessary).

Specific requirements for packaging low-level radioactive waste are specified in the RRWAC, Section 4.5. Low-level radioactive waste soils and/or debris, including telephone poles and fence posts, will be stored in either $0.6 \times 0.6 \times 1.2$ -m or $1.2 \times 1.2 \times 2.4$ -m ($2 \times 2 \times 4$ -ft or $4 \times 4 \times 8$ -ft) hot waste boxes to be sent to RWMC for disposal. The RRWAC states that surface contamination on each package must not exceed those levels specified in the INEEL *Radiological Control Manual*, Manual 15A, Table 2-2, "Summary of Contamination Values."

6. LABELING

No marks or labels are required for the nonconditional industrial waste that will be generated during this project. Marking and labeling of conditional waste PPE on the plastic bag includes:

1. Generator Name
2. Generator Phone Number
3. WSID Number.

Marking and labeling of contact-handled, low-level radioactive waste containers will be performed in accordance with Section 4.5 and DOT regulations (49 CFR 172). Each waste container will include a shipper's unique identification number, consisting of a Integrated Waste Tracking System (IWTS) barcode issued by WGS. Each container will also have correct DOT markings (49 CFR 172, Subpart D) and labels (49 CFR 172, Subpart E), waste package gross weight (49 CFR 172.310[a]), shipper's complete name and address (49 CFR 172.301[d]), and maximum radiation level at contact and at 1 m (3.28 ft) in the air. One set of markings and labels will be placed on the top and opposite sides of each container so that information for each container is always visible and will be legibly printed, stenciled, or neatly hand-lettered.

Containers of CERCLA waste will be labeled with a "CERCLA Waste" label that includes a waste description, list of contaminants of concern (in this case, cesium-137), operable unit identification, and the generator's name and phone number. Additionally, since this is also considered low-level radioactive waste, the requirements described above are applicable.

7. TRANSPORTATION

Waste generated as result of this project will be transported in accordance with requirements identified in DOE Order 460.2, appropriate DOT regulations, and company procedures. The Waste Area Group 4 Environmental Restoration Site Operations Manager will be responsible for contacting appropriate WGS and P&T personnel to arrange for shipping. Personnel that have obtained INEEL Form 134, "INEEL Landfill Complex User's Permit," will transport industrial waste to the CFA Landfill

Complex. Additional requirements specified in the RRWAC, Section 4.3, include that industrial waste must be transported in equipment that is designed and constructed to be readily emptied and kept clean; transported by vehicles that comply with the Idaho State Rules and Regulations and Idaho Solid Waste Management Regulations and Standards, Title 1, Chapter 6, 1-6012; and suitably enclosed or covered to prevent roadside littering, attraction of vectors, or creation of other nuisances.

8. REFERENCES

- 40 CFR 262.11, July 2000, “Standards Applicable to Generators of Hazardous Waste,” *Code of Federal Regulations*, Office of the Federal Register.
- 49 CFR 171, October 2000, “General Information Regulations, and Definitions,” *Code of Federal Regulations*, Office of the Federal Register.
- 49 CFR 172, October 2000, “Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements,” *Code of Federal Regulations*, Office of the Federal Register.
- 49 CFR 172, Subpart D, October 2000, “Definitions Classification, Packaging Group Assignments and Exceptions for Hazardous Materials Other Than Class 1 and Class 7,” *Code of Federal Regulations*, Office of the Federal Register.
- 49 CFR 172, Subpart E, October 2000, “Non-bulk Packaging for Hazardous Materials Other Than Class 1 and Class 7,” *Code of Federal Regulations*, Office of the Federal Register.
- 49 CFR 173, October 2000, “Shippers-General Requirements for Shipment and Packagings,” *Code of Federal Regulations*, Office of the Federal Register.
- 49 CFR 177, October 2000, “Carriage by Public Highway,” *Code of Federal Regulations*, Office of the Federal Register.
- 49 CFR 178, October 2000, “Specifications for Packagings,” *Code of Federal Regulations*, Office of the Federal Register.
- DOE-ID, 2000, *Final Comprehensive Record of Decision for Central Facilities Area Operable Unit 4-13*, Department of Energy Idaho Operations Office, DOE/ID-10719, Rev. 2, July 1997.
- DOE Order 435.1, August 28, 2001, “Radioactive Waste Management,” U.S. Department of Energy.
- DOE Order 460.2, October 26, 1995, “Departmental Materials Transportation and Packaging Management,” U.S. Department of Energy.
- DOE Order 5400.5, January 7, 1993, “Radiation Protection of the Public and the Environment,” U.S. Department of Energy.
- MCP-62, January 2002, “Waste Generator Services—Low Level Waste Management,” Rev. 3, *Manual 17-Waste Management*, Environmental Protection and Compliance.
- MCP-63, August 1999, “Waste Generator Services—Conditional Industrial Waste Management,” Rev. 2, *Manual 17-Waste Management*, Environmental Protection and Compliance.

MCP-70, January 2002, “Waste Generator Services—Mixed Low Level Waste Management,” Rev. 5, *Manual 17-Waste Management*, Environmental Protection and Compliance.

MCP-3472, August 1999, “Identification and Characterization of Environmentally Regulated Waste,” Rev. 0, *Manual 17-Waste Management*, Environmental Protection and Compliance.

Radiation Protection Department, July 2000, *Manual 15A-Radiation Protection INEEL Radiological Control*, Rev. 6.